REMARKS

This paper is responsive to the Office Action dated November 09, 2009 wherein claims 1, 2, 4-10, 15, 17, 19 and 42 were rejected. Claims 20 - 35 stand withdrawn pursuant to a requirement for restriction/election. In view of the following remarks, Applicant respectfully requests reconsideration and allowance of all pending claims.

Rejections under 35 USC 102 / 103

Applicant respectfully traverses the rejection of claims 1, 2, 4-9, 15, 19 and 42 under 35 USC §102(b), as being anticipated by or in the alternative under 35 USC §103(a) as being obvious over Hansen et al. (U.S. Patent No. 5,380,600 Hansen, hereinafter "Hansen").

Anticipation under section 102 can be found only if a single reference shows exactly what is claimed. *Titanium Metals Corp. v. Banner*, 778 F.2d 775, 227 U.S.P.Q. 773 (Fed. Cir. 1985). For a prior art reference to anticipate under section 102, every element of the claimed invention must be identically shown in a single reference. *In re Bond*, 910 F.2d 831, 15 U.S.P.Q.2d 1566 (Fed. Cir. 1990). To maintain a proper rejection under section 102, a single reference must teach each and every limitation of the rejected claim. *Atlas Powder v. E.I. du Pont*, 750 F.2d 1569 (Fed. Cir. 1984). Accordingly, the Applicants need only point to a single element not found in the cited reference to demonstrate that the cited reference fails to anticipate the claimed subject matter. The prior art reference also must show the *identical* invention "*in as complete detail as contained in the ... claim*" to support a *prima facie* case of anticipation. *Richardson v. Suzuki Motor Co.*, 868 F.2d 1226, 1236, 9 U.S.P.Q. 2d 1913, 1920 (Fed. Cir. 1989).

Hansen is missing features recited by independent claim 1.

First, claim 1 recites *inter alia* – "said system is configured to output both hydrogen and electricity".

Hansen does not output both hydrogen and electricity. Hansen shows a closed loop system that produces (only) electricity using the Molten Carbonate Fuel cell. *See* claim 1. As clearly seen from Fig. 1, hydrogen separated from the anode exhaust in hydrogen recovery unit 18 is recycled to anode supply line 40 via line 90. (Hansen, column 3, lines 34-38). Thus the hydrogen production in Hansen is purely for internal consumption and the only output from Hansen is electricity. Thus, Hansen lacks any structural features that will allow the system as a whole to produce both hydrogen and electricity. Thus Hansen lacks this feature of the present invention.

Further, Claim 1 recites *inter alia*, "said system configured to flexibly control production of hydrogen and electricity on demand"

As clearly brought out in Fig. 1 and multiple places in the current specification such as page 7, lines 18 – 21, the separation unit is configured to produce a hydrogen rich stream 28. The Gas turbine 46 and Fuel cell assembly 18 produce electrical energy. Thus the system produces both hydrogen and electrical energy. Moreover, as clearly brought out in page 18, lines 10 – 16, "The co-production systems in accordance with the various embodiments discussed above have the flexibility to control the production of hydrogen from the anode exhaust stream and generation of electricity depending on the demand. For higher demand of exported hydrogen, the fuel call assembly is operated on low utilization mode wherein the anode exhaust stream comprises higher amount of unutilized hydrogen, which may be recovered for export using the separation unit downstream of the fuel cell assembly."

Since Hansen is configured to produce only electricity as discussed earlier, there is no teaching / suggestion / motivation of having a flexibility to flexibly control production and output both hydrogen and electricity on demand. Hansen clearly lacks in this feature and hence cannot anticipate current invention as recited by claim 1.

Applicant respectfully disagrees with the Examiner's observation – "by applicant's argument, applicant illustrates that Hansen's system is configured to produce both hydrogen and electricity." As discussed above, Hansen, taken as a whole is unable to produce hydrogen and electricity. Further the system in Hansen lacks flexibility of controlling the production of hydrogen and electricity on demand. Applicant further respectfully disagrees with the Examiner on his observation - how the hydrogen is used is drawn to the method of operating the device and limitations drawn to the method of operating are not further limiting to the apparatus. It is Applicant's position that often, the

method and the apparatus for carrying out the same are intricately linked. The method will not be enabled without presence of apparatus supporting the same. In this instance for example, the flexible operation of the system in which the mole fraction of hydrogen at the anode outlet is between about 0.1 to about 0.5, etc. is not possible, without underlying hardware.

Applicant respectfully disagrees with the observation of Examiner that Hansen teaches a system configured to flexibly control the production of hydrogen and electricity that is on demand by altering the outlet reforming from adiabatic to no outlet reforming to isothermal (Tables 1-3), the system can be turned on and off and therefore the control the amount of hydrogen and electricity on demand.

Applicant respectfully submit – that these are merely the arguments put forward by the Examiner, without any suggestions in Hansen. As clearly stated by Hansen at C4;L24-29, it just shows the operating conditions and stream compositions for fuel cell with or without reformer 12. The on-off and the control aspects are clearly absent in the Hansen.

Therefore, Applicant respectfully submits that Hansen, does not disclose every element of independent claim 1 and does not anticipate it under 35 USC 102(b). Claims 2, 4-9, 15, 19 and 42 depend directly or indirectly from claim 1. Applicant respectfully requests that the Examiner withdraw the rejection under 35 USC 102 / 103.

Rejections under 35 USC §103

The Examiner has rejected claims 1, 2, 4-10, 15, 17, 19 and 42 under 35 USC §103(a) as being unpatentable over over Farooque (U.S. Patent No. 5,084,362, hereinafter "Farooque") in view of Nakamura et al. (U.S. Patent No. 7,052,790, hereinafter "Nakamura") as evidenced by Baker (U.S.Patent No. 3,522,101, hereinafter "Baker").

First, claim 1 recites, inter alia, "said system is configured to output both hydrogen and electricity" and "system configured to flexibly control production of hydrogen and electricity on demand."

Thus, to anticipate or render the claims obvious, the system recited in the

reference has to (produce) output both hydrogen and electrical energy and have a flexibility of operation to produce either based on demand (emphasis added).

Farooque, as shown in FIG. 1, recites a closed loop system - the hydrogen production in Farooque is only for internal consumption and (produces) outputs only electrical energy. Thus it lacks features of outputting both hydrogen and electricity.

Nakamura describes a fuel cell system, wherein hydrogen-side exhaust gas is introduced into the combustion section 42 of the reformer and burned with the city gas, thus, hydrogen though produced in the system is consumed within and only electricity is output from the system as a whole.

Baker describes a system combining thermally regenerable battery and fuel cell. However, it does not describe production of hydrogen. It recites production of electricity and work (using heat engine).

Combination of Farooque with any of the secondary references – Nakamura or Baker does not overcome the deficiency that Farooque does not output both hydrogen and electricity. Hence, Applicant respectfully requests the Examiner to withdraw said rejection of claims 1, 2, 3-10, 15, 17, 19 and 42 under 35 USC §103(a) as being unpatentable over Farooque in view of Nakamura as evidenced by Baker.

At least for these reasons among others, Applicant submits that the combination of these references does not teach, suggest or disclose the invention as recited in claim 1 and hence any of the claims dependent directly or indirectly on claim 1. Applicant respectfully requests that the Examiner withdraw the rejection under 35 USC 103.

Summary

For the reasons set out above, Applicant respectfully submits that the application is in condition for allowance. Favorable reconsideration and allowance of the application are, therefore, respectfully requested.

If the Examiner believes that anything further is necessary to place the application in better condition for allowance, the Examiner is kindly asked to contact

Applicant's undersigned representative at the telephone number below.

Respectfully submitted,

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